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1 [Multidimensional access methods](#)
[Volker Gaede, Oliver Günther](#)

 June 1998 **Computing Surveys (CSUR)**, Volume 30 Issue 2

Publisher: ACM

 Full text available: [Pdf](#) (1.05 MB)

 Additional Information: [full citation](#), [abstract](#), [re](#)
Bibliometrics: Downloads (6 Weeks): 83, Downloads (12 Months): 527, Citation

Search operations in databases require special support at the physical level. Conventional databases as well as spatial databases, where typical search queries (find all objects that contain ...)

Keywords: data structures, multidimensional access methods

2 [Object-based and image-based object representations](#)
[Hanan Samet](#)

 June 2004 **Computing Surveys (CSUR)**, Volume 36 Issue 2

Publisher: ACM

 Full text available: [Pdf](#) (1.05 MB)

 Additional Information: [full citation](#), [abstract](#), [re](#)
Bibliometrics: Downloads (6 Weeks): 42, Downloads (12 Months): 368, Citation

An overview is presented of object-based and image-based representations of spatial interiors. The representations are distinguished by the manner in which they support two fundamental queries in database applications: (1) Feature ...

Keywords: Access methods, R-trees, feature query, geographic information space, location query, object space, octrees, pyramids, quadrees, spatial databases

3 [Collision detection and proximity queries](#)
[Sunil Hadap, Dave Eberle, Pascal Volino, Ming C. Lin, Stephane Redon, Chris](#)
 August 2004 **SIGGRAPH '04: SIGGRAPH 2004 Course Notes**
Publisher: ACM

 Full text available: [Pdf](#) (11.22 MB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 85, Downloads (12 Months): 619, Citation


This course will primarily cover widely accepted and proved methodologies

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addition more advanced or recent topics such as continuous collision detection, graphics hardware will be introduced. When appropriate ...

4 [Level set and PDE methods for computer graphics](#)

 [David Breen, Ron Fedkiw, Ken Museth, Stanley Osher, Guillermo Sapiro, et al.](#)
August 2004 **SIGGRAPH '04: SIGGRAPH 2004 Course Notes**
Publisher: ACM

Full text available:  [Pdf](#) (17.07 MB)

Additional Information: [full citation](#), [abstract](#), [re](#)

Bibliometrics: Downloads (6 Weeks): 137, Downloads (12 Months): 1087, Citation

Level set methods, an important class of partial differential equation (PDE) surfaces implicitly as the level set (iso-surface) of a sampled, evolving field with preparatory material that introduces the ...

5 [Data and memory optimization techniques for embedded systems](#)

 [P. R. Panda, F. Catthoor, N. D. Dutt, K. Danckaert, E. Brockmeyer, C. Kulkarni, Kjelidsberg](#)
April 2001 **Transactions on Design Automation of Electronic Systems**
Publisher: ACM

Full text available:  [Pdf](#) (339.91 KB)


Additional Information: [full citation](#), [abstract](#), [re](#)


Bibliometrics: Downloads (6 Weeks): 80, Downloads (12 Months): 556, Citation

We present a survey of the state-of-the-art techniques used in performing optimizations in embedded systems. The optimizations are targeted directly at the memory subsystem, and impact one or more out of three important ...

Keywords: DRAM, SRAM, address generation, allocation, architecture exploration, transformation, data cache, data optimization, high-level synthesis, memory customization, memory power dissipation, register file, size estimation, synthesis

6 [Real-time shading](#)

 [Marc Olano, Kurt Akeley, John C. Hart, Wolfgang Heidrich, Michael McCool, et al.](#)
August 2004 **SIGGRAPH '04: SIGGRAPH 2004 Course Notes**
Publisher: ACM


Full text available:  [Pdf](#) (7.39 MB)

Additional Information: [full citation](#), [abstract](#), [re](#)

Bibliometrics: Downloads (6 Weeks): 87, Downloads (12 Months): 703, Citation

Real-time procedural shading was once seen as a distant dream. When it was offered four years ago, real-time shading was possible, but only with combining the effects of tens to hundreds of rendering ...

7 [Geometric modeling based on polygonal meshes](#)

 **Video files associated with this course are available from the citation**
[Mario Botsch, Mark Pauly, Leif Kobbelt, Pierre Alliez, Bruno Lévy, Stephan Lefebvre](#)
August 2007 **SIGGRAPH '07: SIGGRAPH 2007 courses**
Publisher: ACM

Full text available:  [Pdf](#) (44.53 MB)

Additional Information: [full citation](#), [appendices](#), [references](#)


Bibliometrics: Downloads (6 Weeks): 368, Downloads (12 Months): 1407, Citation

In the last years triangle meshes have become increasingly popular and in many different areas of computer graphics and geometry processing. triangle meshes developed into a valuable alternative ...

8 [Glift: Generic, efficient, random-access GPU data structures](#)

 [Aaron E. Lejohn](#), [Shubhabrata Sengupta](#), [Joe Kniss](#), [Robert Strzodka](#), [John](#)
January 2006 **Transactions on Graphics (TOG)** , Volume 25 Issue 1

Publisher: ACM

Full text available:  [Pdf](#) (1.52 MB)

Additional Information: [full citation](#), [abstract](#), [re](#)

Bibliometrics: Downloads (6 Weeks): 41, Downloads (12 Months): 308, Citation

This article presents Glift, an abstraction and generic template library for access graphics processor (GPU) data structures. Like modern CPU data enables GPU programmers to separate algorithms from ...

Keywords: Adaptive, GPGPU, GPU, adaptive shadow maps, data structu
multiresolution, octree textures, parallel computation

9 [Integrating symbolic images into a multimedia database system using abstraction approaches](#)

[Aya Soffer](#), [Hanan Samet](#)

December 1998 **The VLDB Journal — The International Journal on Ver**
Issue 4

Publisher: Springer-Verlag New York, Inc.

Full text available:  [Pdf](#) (227.30 KB)


Additional Information: [full citation](#), [abstract](#), [re](#)

Bibliometrics: Downloads (6 Weeks): 15, Downloads (12 Months): 83, Citation

Symbolic images are composed of a finite set of symbols that have a sen
symbolic images include maps (where the semantic meaning of the symt
engineering drawings, and floor plans. Two approaches for ...

Keywords: Image indexing, Multimedia databases, Query optimization,
databases, Symbolic-image databases

10 [Part IV: runtime texture synthesis](#)

 [Sylvain Lefebvre](#)

August 2007 **SIGGRAPH '07: SIGGRAPH 2007 courses**

Publisher: ACM

Full text available:  [Mov](#) (106:46 MIN),  [Pdf](#) (11.07 MB) Additional Information: [full cita](#)

Bibliometrics: Downloads (6 Weeks): 11, Downloads (12 Months): 157, Citation

A typical texture synthesis algorithm takes as input a small example ima
larger image resembling it within a few minutes. Such algorithms are ext
texture generators. However, once the texture is synthesized ...

11 [Spatial data structures](#)

 [Hanan Samet](#)

August 2007 **SIGGRAPH '07: SIGGRAPH 2007 courses**

Publisher: ACM

Additional Information:


[full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation

An overview is presented of the use of spatial data structures in spatial hierarchical data structures, including a number of variants of quadrees respect to the space occupied by it. Such techniques ...

Keywords: R-tree, R⁺-tree image processing, hierarchical spatial data points, quadrees, rectangles, spatial databases

12 [SINA: scalable incremental processing of continuous queries in spatial](#)

 Mohamed F. Mokbel, Xiaopeing Xiong, Walid G. Aref

June 2004 **SIGMOD '04**: Proceedings of the 2004 ACM SIGMOD international conference on Management of data


Publisher: ACM

Full text available:  Pdf (332.35 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 14, Downloads (12 Months): 111, Citation

This paper introduces the *Scalable INcremental hash-based Algorithm* (SINA) algorithm for evaluating a set of concurrent continuous spatio-temporal queries. Two goals in mind: (1) Scalability in terms of the ...

13 [Enabling scientific workflows in virtual reality](#)

 Oliver Kreylos, Gerald Bawden, Tony Bernardin, Magail J. Billen, Eric S. Corbett, Hamann, Margarete Jadamec, Louise H. Kellogg, Oliver G. Staadt, Dawn Y.

June 2006 **VRCA '06**: Proceedings of the 2006 ACM international conference on Virtual Reality Continuum and its applications

Publisher: ACM


Full text available:  Pdf (310.56 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 31, Downloads (12 Months): 216, Citation

To advance research and improve the scientific return on data collection in the geosciences, we have developed methods of interactive visualization in immersive virtual reality (VR) environments. Earth ...


Keywords: geosciences, scientific visualization, virtual reality, workflow

14 [Efficient query processing on spatial networks](#)

 Jagan Sankaranarayanan, Hourman Alborzi, Hanan Samet

November 2005 **GIS '05**: Proceedings of the 13th annual ACM international conference on Information systems

Publisher: ACM


Full text available:  Pdf (1.40 MB) Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 12, Downloads (12 Months): 113, Citation


A framework for determining the shortest path and the distance between two vertices in a spatial network is presented. The framework, termed SILC, uses *path cost* and the spatial positions of vertices on ...

Keywords: SILC framework, location-based services, path coherence, q databases, spatial networks

15 Streaming computation of Delaunay triangulations

 [Martin Isenburg](#), [Yuanxin Liu](#), [Jonathan Shewchuk](#), [Jack Snoeyink](#)
July 2006 **SIGGRAPH '06**: SIGGRAPH 2006 Papers

Publisher: ACM

Full text available:  [Mov](#) (20:20 MIN),  [Pdf](#) (387.93 KB) Additional Information: [full citation](#), [index](#), [te](#)

Bibliometrics: Downloads (6 Weeks): 29, Downloads (12 Months): 214, Citation


We show how to greatly accelerate algorithms that compute Delaunay tr distributed point sets in 2D and 3D by exploiting the natural spatial cohe We achieve large performance gains by introducing *spatial* ...

Keywords: *Delaunay triangulation, TIN terrain model, geometry proces stream processing*


Also published in:

July 2006 **Transactions on Graphics (TOG)** Volume 25 Issue 3

16 Hardware acceleration for spatial selections and joins

 [Chengyu Sun](#), [Divyakant Agrawal](#), [Amr El Abbadi](#)
June 2003 **SIGMOD '03**: Proceedings of the 2003 ACM SIGMOD internatio Management of data

Publisher: ACM

Full text available:  [Pdf](#) (744.80 KB) Additional Information: [full citation](#), [abstract](#), [re](#)

Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 66, Citation


Spatial database operations are typically performed in two steps. In the minimum bounding rectangles (MBRs) of the objects are used to quickly objects, and in the *refinement* step, ...

Keywords: hardware acceleration, spatial join, spatial selection

17 Adaptive 4-8 Texture Hierarchies

[Lok M. Hwa](#), [Mark A. Duchaineau](#), [Kenneth I. Joy](#)
October 2004 **VIS '04**: Proceedings of the conference on Visualization '04

Publisher: IEEE Computer Society


Full text available:  [Pdf](#) (315.69 KB) Additional Information: [full citation](#), [abstract](#), [re](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 50, Citation C

We address the texture level-of-detail problem for extremely large surfac realtime, view-dependent rendering. A novel texture hierarchy is introdu of raster tiles, in which the texture grids in effect ...

Keywords: Large Data Set Visualization, Level-of-Detail Techniques, Vie Adaptive Textures, Out-of-Core Algorithms

18 [Sorting in space: multidimensional, spatial, and metric data structure applications](#)

 [Hanan Samet](#)

August 2008 **SIGGRAPH '08**: SIGGRAPH 2008 classes


Publisher: ACM

Full text available:  [Mov](#) (104:28 MIN),  [Pdf](#) (2.35 MB) Additional Information: [full citation](#)

Bibliometrics: Downloads (6 Weeks): 55, Downloads (12 Months): 260, Citation


The representation of spatial data is an important issue in game program visualization, solid modeling, and related areas including computer vision systems (GIS). A wide number of representations is ...

19 [QuickTime VR: an image-based approach to virtual environment navigation](#)

 [Shenchang Eric Chen](#)

September 1995 **SIGGRAPH '95**: Proceedings of the 22nd annual conference on interactive techniques


Publisher: ACM

Full text available:  [Pdf](#) (347.59 KB) Additional Information: [full citation](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 57, Downloads (12 Months): 284, Citation


Keywords: environment maps, image registration, image warping, panoramic display, view interpolation, virtual reality

20 [Representing shape with a spatial pyramid kernel](#)

 [Anna Bosch](#), [Andrew Zisserman](#), [Xavier Munoz](#)

July 2007 **CVPR '07**: Proceedings of the 6th ACM international conference on computer vision

Publisher: ACM

Full text available:  [Pdf](#) (3.15 MB) Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 33, Downloads (12 Months): 192, Citation

The objective of this paper is classifying images by the object categories motorbikes or dolphins. There are three areas of novelty. First, we introduce a local image shape and its spatial layout, ...

Keywords: object and video retrieval, shape features, spatial pyramid kernel

Result

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